

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A mercury vapor discharge fluorescent lamp comprising a light-transmissive glass envelope having an inner surface, a phosphor layer disposed adjacent said inner surface of said glass envelope, and a discharge-sustaining fill gas of mercury vapor and inert gas sealed inside said envelope, said glass envelope comprising an integral annular mercury-insulating portion of said glass envelope, said annular mercury-insulating portion being effective to inhibit mercury atoms from absorbing into said glass envelope and amalgamating with sodium atoms therein.
2. (original) A lamp according to claim 1, said glass envelope being made from soda-lime glass.
3. (previously presented) A lamp according to claim 1, said mercury-insulating portion of said glass envelope comprising a material selected from the group consisting of non-sodium metal ions, non-sodium metal atoms, semi-metallic ions, semi-metallic atoms, and mixtures thereof.
4. (previously presented) A lamp according to claim 1, said mercury-insulating portion of said glass envelope comprising a material selected from the group consisting of potassium atoms, potassium ions, calcium atoms and calcium ions.
5. (currently amended) A lamp according to claim 1, ~~said radial depth of said mercury-insulating portion being~~ having a radial depth of at least 10 μ m measured from said inner surface of said glass envelope.

6. (currently amended) A lamp according to claim ~~[[1]]~~ 5, said radial depth of said mercury-insulating portion being 25-100 μm .

7. (currently amended) A lamp according to claim 1, wherein said mercury-insulating portion is a compressional ~~section~~ portion comprising densely packed species, and wherein said densely packed species does not substantially complex, react, or amalgamate with said mercury vapor inside said envelope.

8. (previously presented) A lamp according to claim 1, wherein said mercury-insulating portion is substantially transmissive of visible light.

9. (original) A lamp according to claim 7, wherein said densely packed species is selected from the group consisting of potassium atoms and potassium ions.

10. (original) A lamp according to claim 7, wherein said densely packed species is selected from the group consisting of calcium atoms and calcium ions.

11. (previously presented) A lamp according to claim 1, wherein said mercury-insulating portion of said glass envelope is substantially electrically non-conductive.

12. (original) A lamp according to claim 1, said lamp exhibiting fewer than 30 degrees of discoloration at 2000 hours of cyclical operation.

13. (original) A lamp according to claim 1, said lamp exhibiting fewer than 30 degrees of discoloration at 3000 hours of cyclical operation.

14. (original) A lamp according to claim 1, said lamp having a lumen efficiency of at least 54 lumens/watt at 2000 hours cyclical operation.

15. (original) A lamp according to claim 1, said lamp having a lumen efficiency of at least 54 lumens/watt at 3000 hours of cyclical operation.

16. (original) A lamp according to claim 1, said lamp having a lumen maintenance of at least 0.88 at 2000 hours of cyclical operation.

17. (original) A lamp according to claim 1, said lamp having a lumen maintenance of at least 0.88 at 3000 hours of cyclical operation.

18. (currently amended) A mercury vapor discharge fluorescent lamp comprising a light-transmissive glass envelope having an inner surface, a phosphor layer disposed adjacent said inner surface of said glass envelope, a separate mercury barrier layer disposed adjacent said phosphor layer, and a discharge-sustaining fill gas of mercury vapor and inert gas sealed inside said envelope, said mercury barrier layer comprising a material selected from the group consisting of potassium salts, calcium salts and mixtures thereof, said mercury barrier layer being effective to inhibit mercury atoms from absorbing into said glass envelope and amalgamating with sodium atoms therein.

19. (previously presented) A lamp according to claim 18, said mercury barrier layer comprising at least 0.5 weight percent potassium.

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20. (original) A lamp according to claim 19, said mercury barrier layer being 10-100 nm thick.

21. (canceled).

22. (previously presented) A mercury vapor discharge fluorescent lamp comprising a light-transmissive glass envelope having an inner surface, a mercury barrier layer disposed adjacent said inner surface of said glass envelope, a phosphor layer disposed adjacent said mercury barrier layer, and a discharge-sustaining fill gas of mercury vapor and inert gas sealed inside said envelope, said mercury barrier layer being a compressional layer of densely packed non-activated and substantially electrically non-conductive tin oxide.

23. (previously presented) A lamp according to claim 22, said tin oxide barrier layer being 5-200 nanometers thick.

24. (previously presented) A mercury vapor discharge fluorescent lamp comprising a light-transmissive glass envelope having an inner surface, a phosphor layer disposed adjacent said inner surface of said glass envelope, and a discharge-sustaining fill gas of mercury vapor and inert gas sealed inside said envelope, said phosphor layer comprising at least one potassium species to provide a mercury barrier therein, said mercury barrier of said phosphor layer being effective to inhibit mercury atoms from absorbing into said glass envelope and amalgamating with sodium atoms therein.

25. (canceled).

26. (previously presented) A lamp according to claim 24, wherein said potassium species is a potassium salt selected from the group consisting of potassium chloride, potassium nitrate, potassium borate, and mixtures thereof.

27. (original) A lamp according to claim 1, said lamp being a high wattage fluorescent lamp and having a lumen maintenance of at least 0.6 at 2000 hours of cyclical operation.

28. (original) A lamp according to claim 1, said lamp being a high wattage fluorescent lamp and having a lumen maintenance of at least 0.6 at 3000 hours of cyclical operation.

29. (previously presented) A lamp according to claim 18, said mercury barrier layer being a potassium salt barrier layer.

30. (previously presented) A lamp according to claim 24, said potassium species being a potassium salt.

31. (previously presented) A lamp according to claim 1, said annular mercury-insulating portion of said glass envelope comprising potassium species and being formed through ion exchange with sodium atoms initially present in the glass envelope by dipping the envelope in a potassium melt.

32. (previously presented) A lamp according to claim 1, said annular mercury-insulating portion of said glass envelope extending from said inner surface thereof to a radial depth measured radially outward from said inner surface.